

Colloquium: Center for Exoplanets and Habitable Worlds Colloquium  
Location: Penn State University, University Park, PA  
Dates: Nov. 11, 2011

Title: "Exoplanetary Science: Instrumentation, Observations, and Expectations"  
Presenter: Michael McElwain

Abstract:

More than 700 exoplanets have been discovered and studied using indirect techniques, leading our field into the exciting new era of comparative exoplanetology. However, the direct detection of exoplanetary systems still remains at the sensitivity limits of both ground- and space-based observatories. The development of new technologies for adaptive optics systems and high contrast instruments continues to increase the ability to directly study exoplanets. The scientific impact of these developments has promising prospects for both short and long timescales. In my talk, I will discuss recent highlights from the SEEDS survey and the current instrumentation in use at the Subaru telescope. SEEDS is a high contrast imaging strategic observing program with 120 nights of time allocated at the NAOJ's flagship optical and infrared telescope. I will also describe new instrumentation I designed to improve the SEEDS capabilities and efficiency. Finally, I will briefly discuss the conceptual design of a transiting planet camera to fly as a potential second generation instrument on-board NASA's SOFIA observatory.